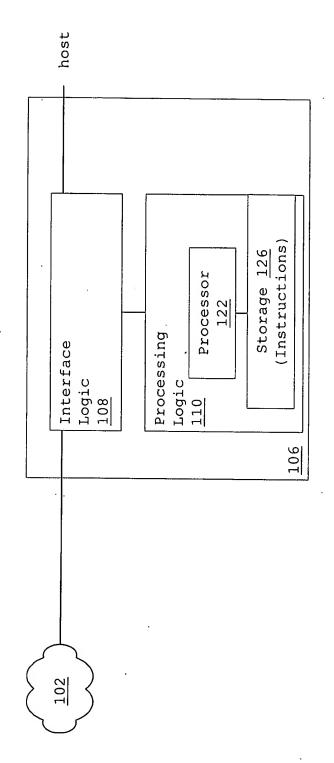
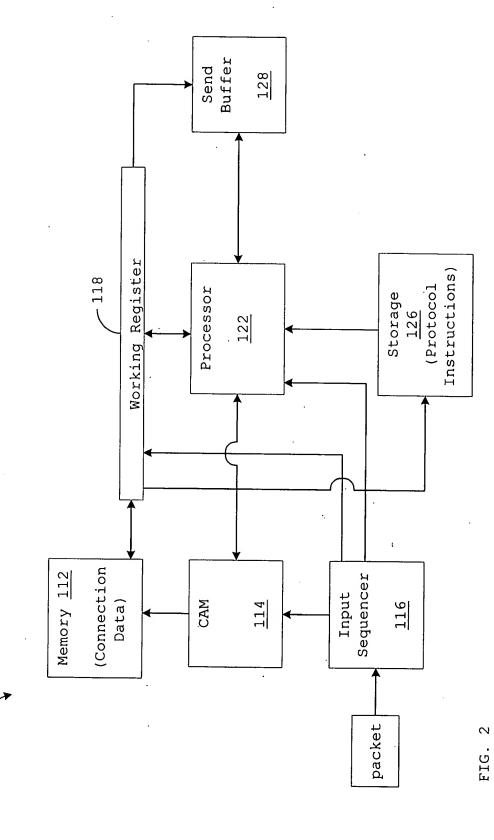
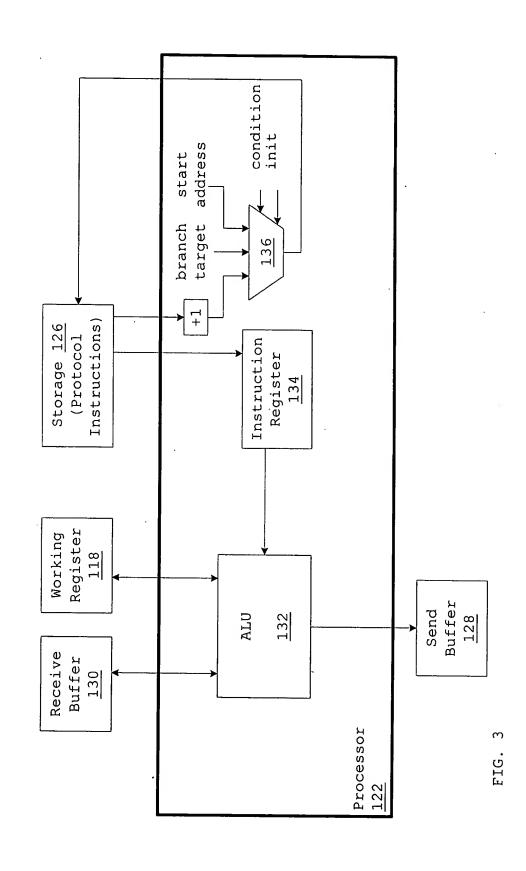
METHOD, SYSTEM, AND PROGRAM FOR A NETWORK PROTOCOL PROCESSOR S. R. Vangal et al. P17737 \mathcal{L} of 3 \mathcal{L}



METHOD, SYSTEM, AND PROGRAM FOR A NETWORK PROTOCOL PROCESSOR S. R. Vangal et al. P17737 Sheet \mathcal{A} of 32

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Instruction	Operands	ınds
LOAD	regA <	< data
MOV	regA	> regB
AND / OR	regA	regB> cond
 ADD / SUB	regA	regB> regC
 CMP / EQUAL	regA	regB> cond
NOT	regA	> regC
BREQZ/BRNEQZ/JMP	1P	label
SHL2	regA	
 CAM1CLR	index	
 TCBWR	index	

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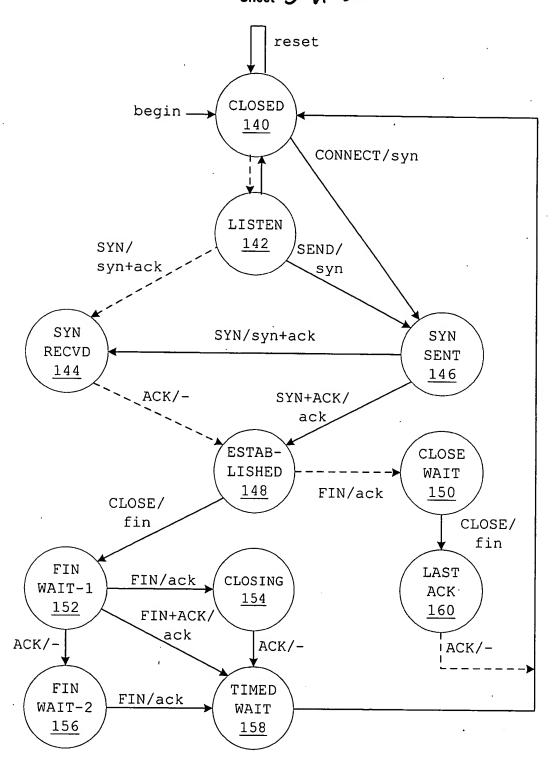
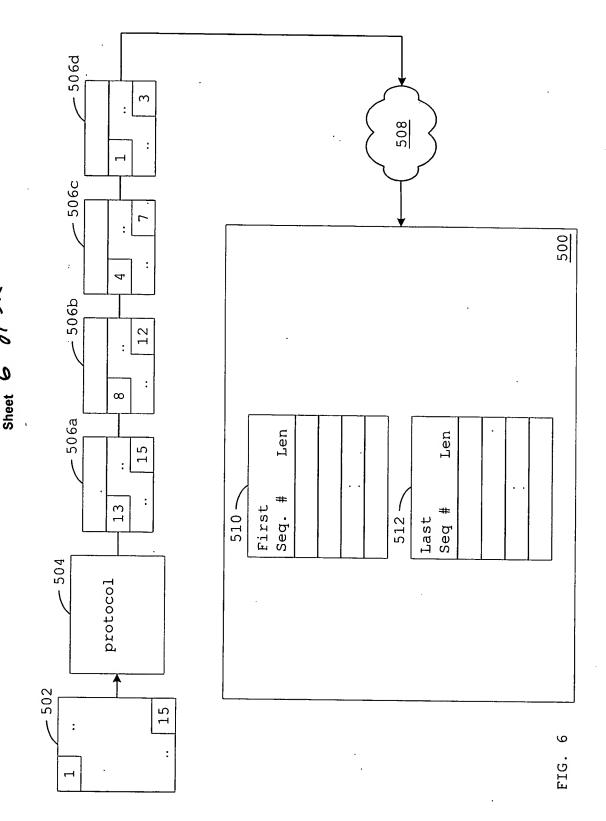
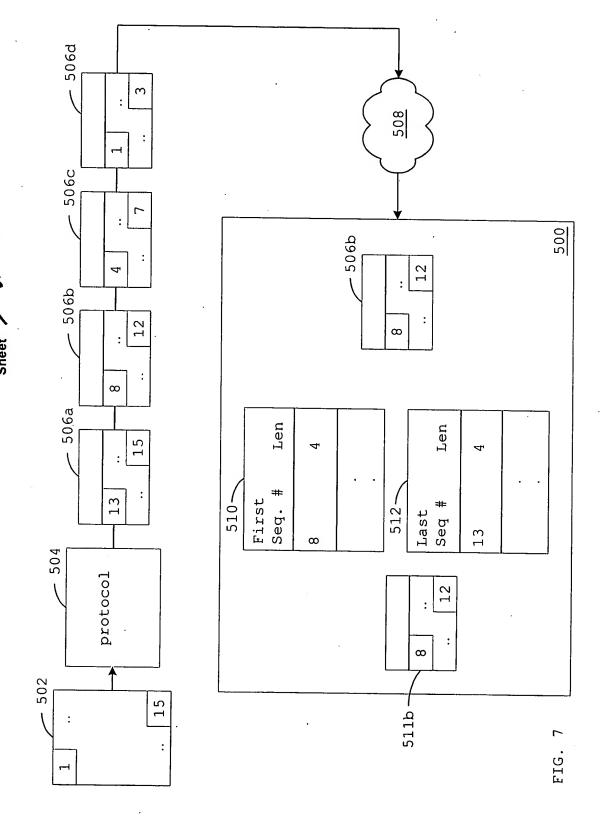


FIG. 5 (PRIOR ART)

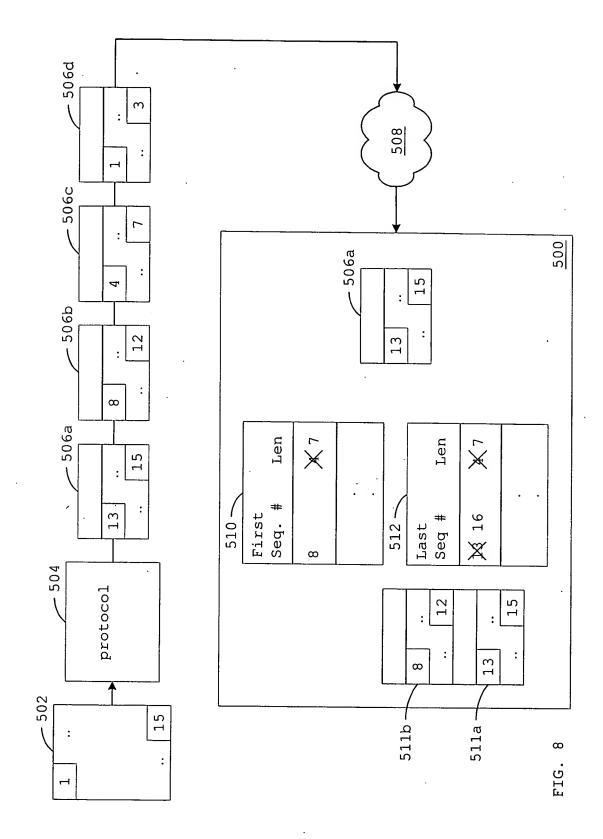
NETWORK PROTOCOL PROCESSOR
S. R. Vangal et al.
P17737 6 0 £ 3 \tau



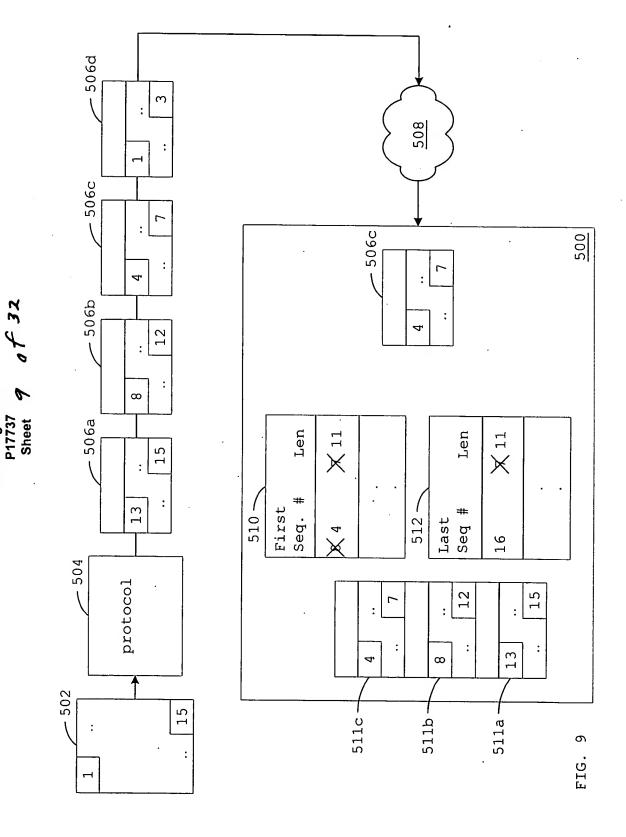
NETWORK PROTOCOL PROCESSOR
S. R. Vangal et al.
P17737
Sheet 7
Sheet 7



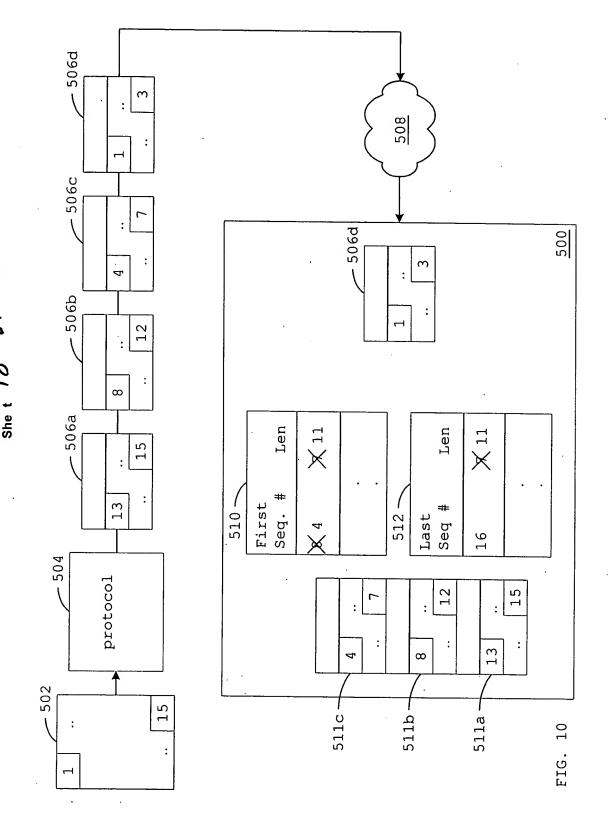
NETWORK PROTOCOL PROCESSOR
S. R. Vangal et al.
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Sheet & of 3.

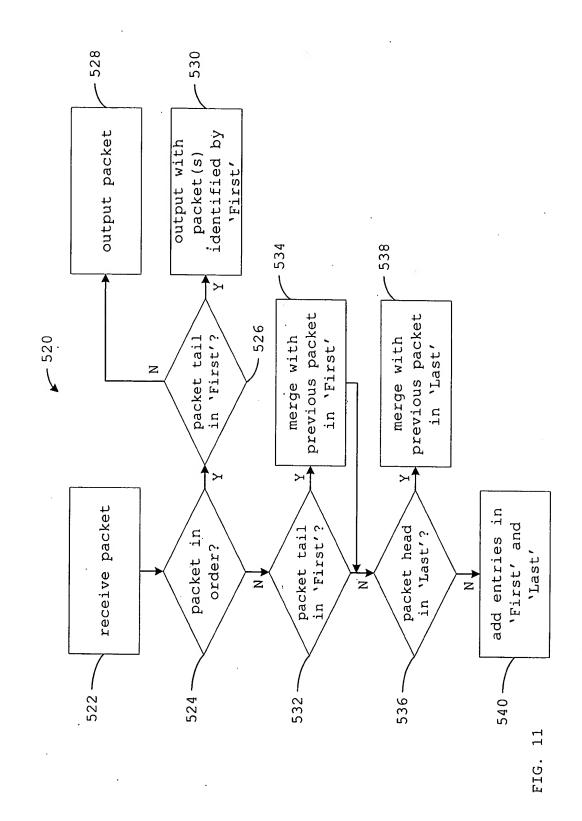


NETWORK PROTOCOL PROCESSOR
S. R. Vangal et al.
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Sheet

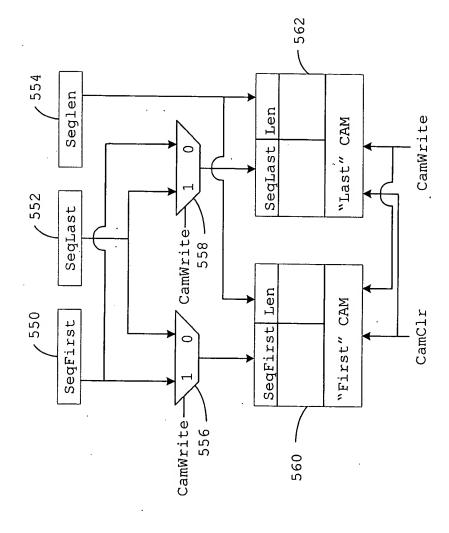


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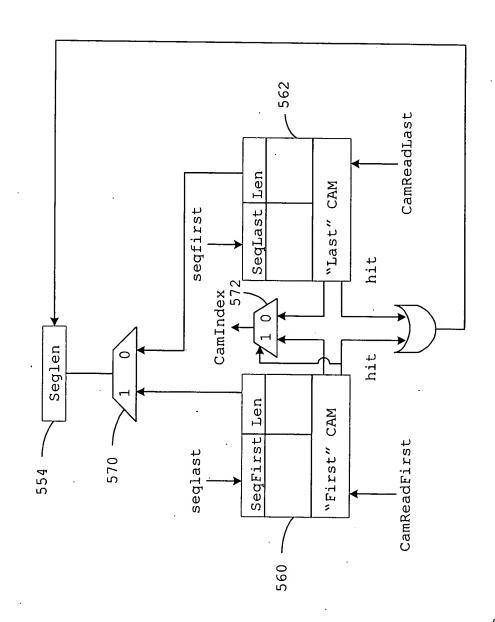
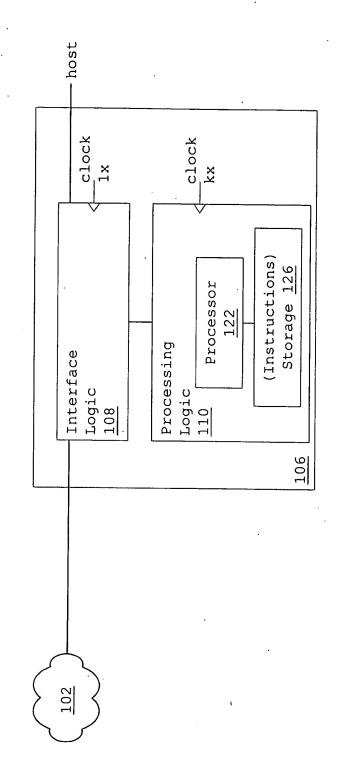


FIG. 13

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A 32

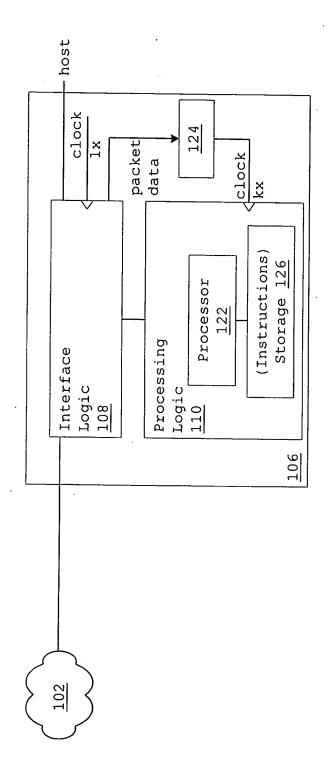
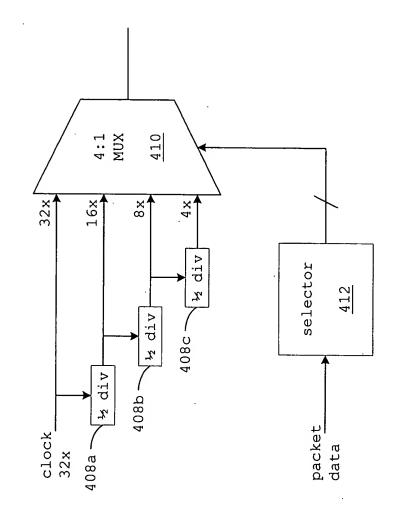
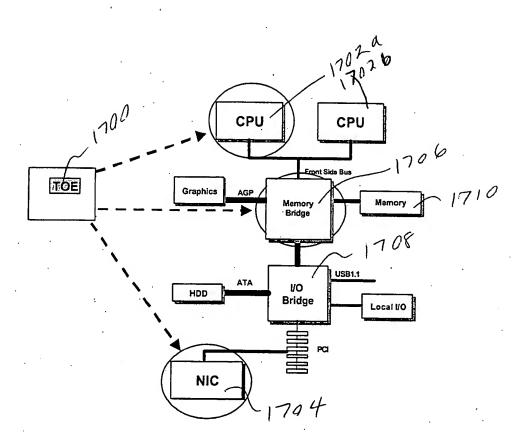


FIG. 15

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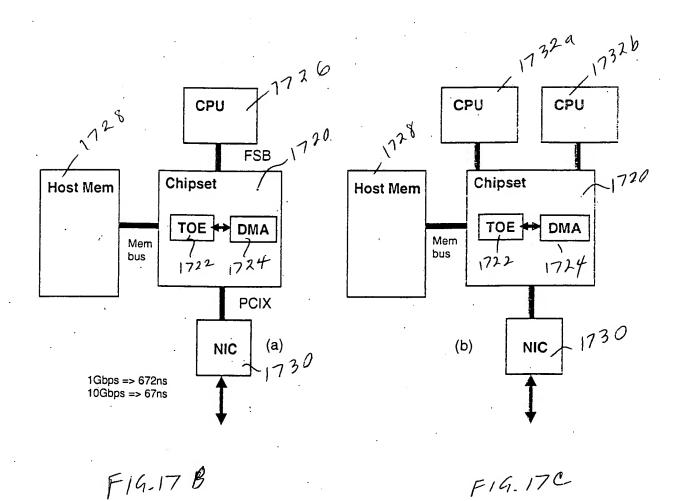


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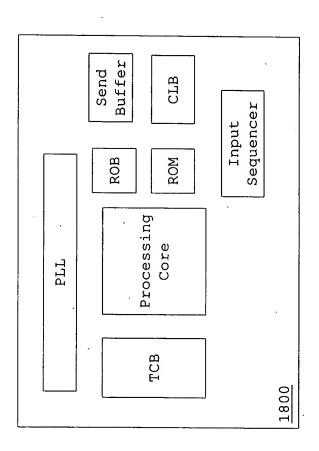


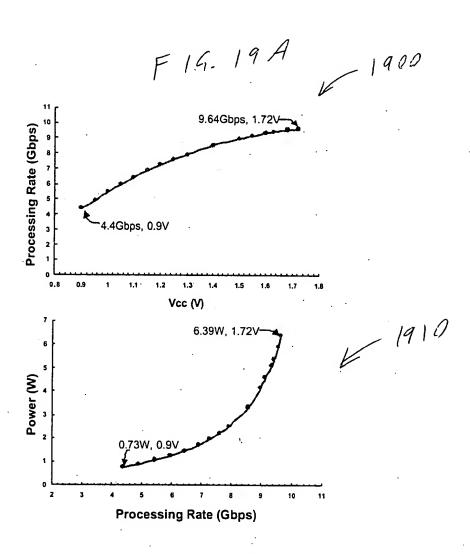
F16-17 A

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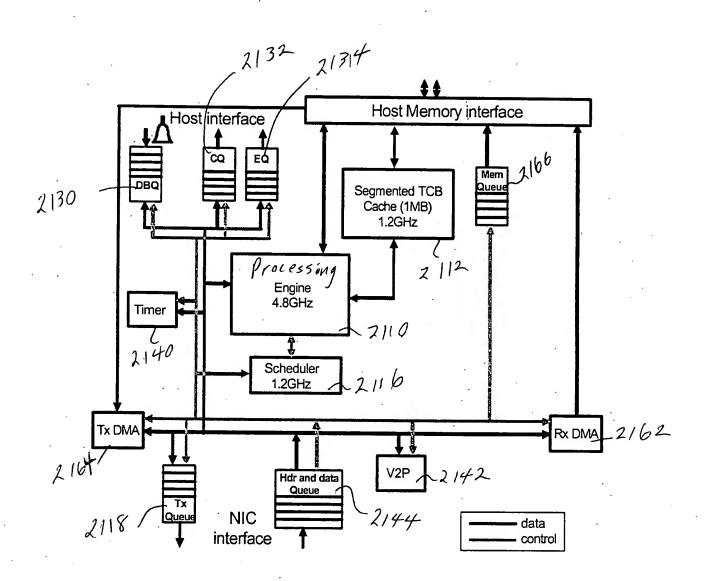


F1G- 19 B

NETWORK PROTOCOL PROCESSOR
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					64-1516 bytes				 -									
- 2000					· · · · · ·		C	negment										
	Preamble	Start-of-Frame Delimiter	HW Destination Address	HW Source Address	Length Type	. IP Header	TCP Header	Application (real) Data	Frame Check Sequence	→ ▶	Preamble	Start-of-Frame Delimiter	HW Destination Address	HW Source Address	Length Type	•	•	•
,	7 bytes	1 byte	6 bytes	6 bytes	2 bytes		46-1500 bytes		4 bytes			·						

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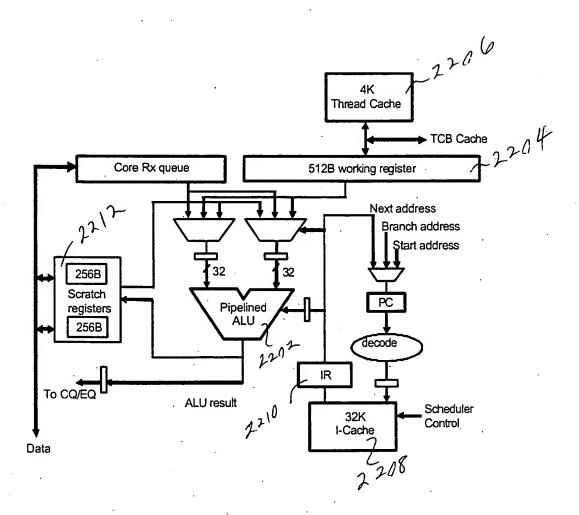


F19. 21

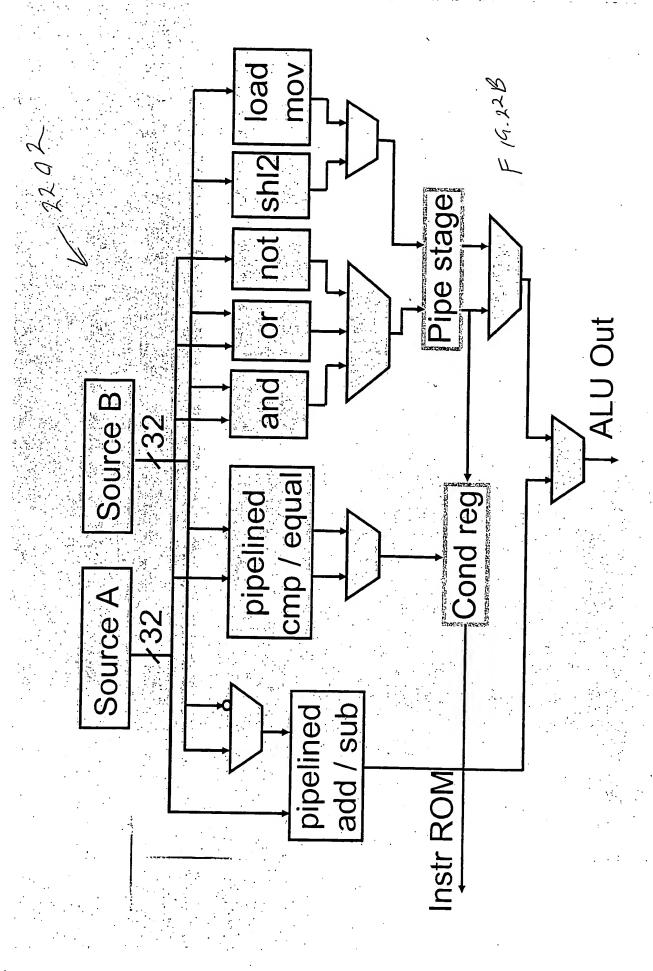
NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

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F 16-22 A



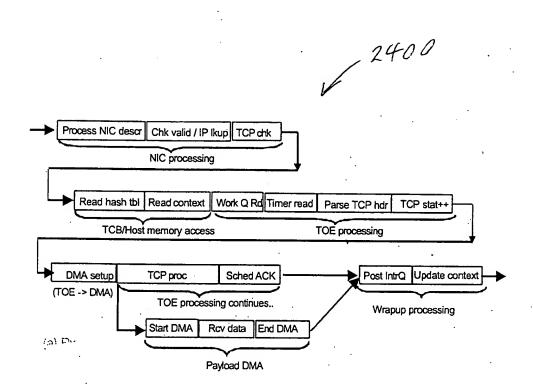
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fransport API Kernel-level Kernel Mode User Mode

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F16-24A

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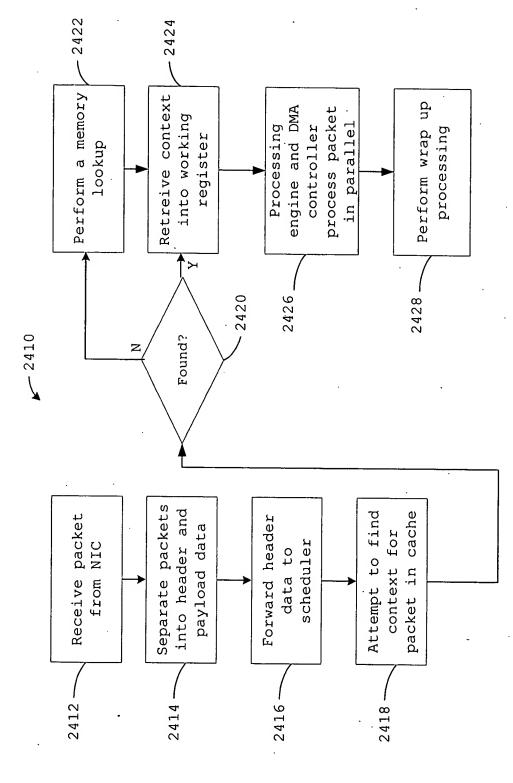
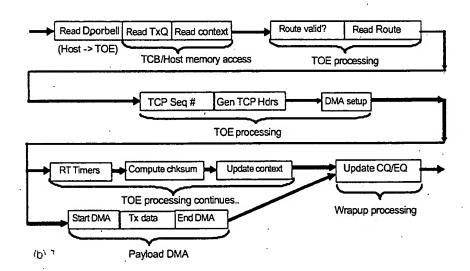


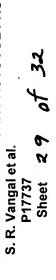
FIG. 241

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V 2450



F16-246



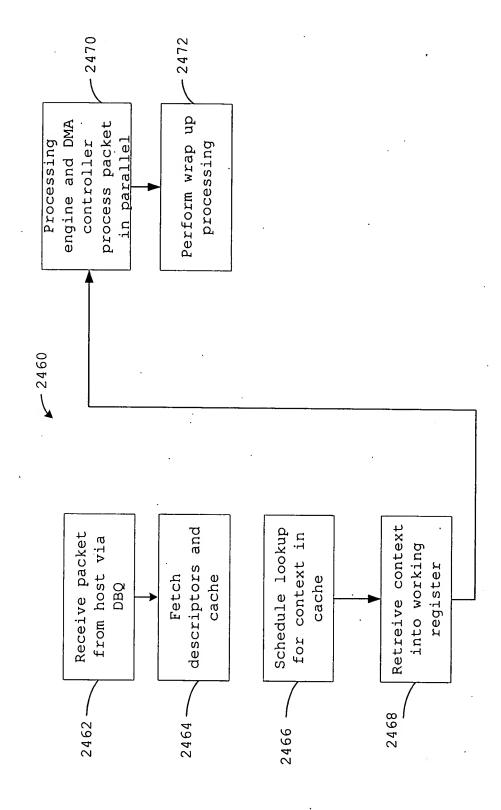


FIG. 24D

NETWORK PROTOCOL PROCESSOR

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General purpose

LOAD A ← data								
MOV A → B								
AND A B → cond								
OR AB → cond								
ADD A B → C								
SUB A B → C								
CMP A B → cond								
EQUAL A B →cond								
NOT A → C .								
BREQZ / BRNEQZ label								
JMP label								
SHL2 A								
NOP								

Special purpose

opcolar purpose							
Catégory	Instructions						
Context access	TCBRD, TCBWR						
Hashing	HSHLKP, HSHUPDT						
Multi-threading	THRDSV, THRDRST						
DMA commands	DMATX, DMARX						
Timers	TIMERRD, TIMERRW						
Network to host byte order	HTONS, HTONL, NTOHL, NTOHS						

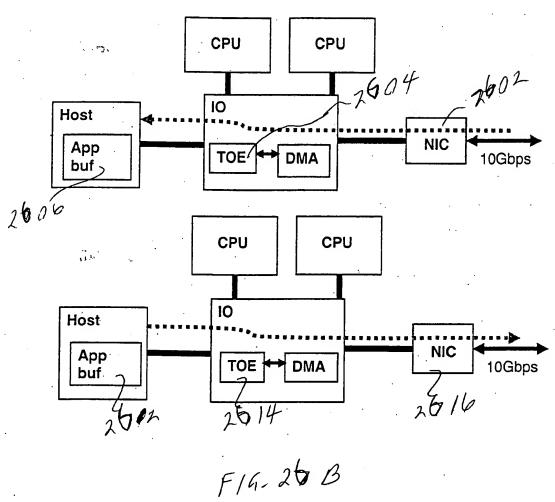
F19-25B

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FIGLSA

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F16.26A



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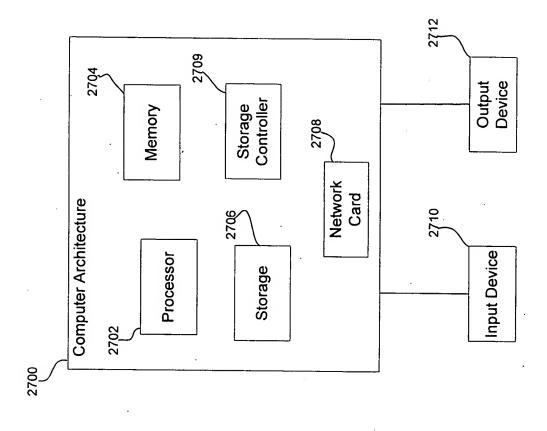


FIG. 2